

Name (printed legibly):

Directions: The quiz contains 20 problems, and each problem is worth one point. Place your answer in the blank provided to the right. For graphing questions, a set of axes are provided. **Calculators are not allowed.**

For this quiz only, no partial credit will be given.

1. Evaluate $8^{-2/3}$. You should have no exponents in your final answer.

2. Find the exact value of $\log_{10}\left(\frac{1}{10000}\right)$.

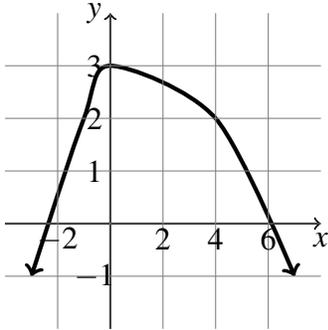
3. Find the exact value of $\sin\left(\frac{3\pi}{4}\right)$.

4. Simplify the expression $\left(\frac{3xy}{x^4y^{7/2}}\right)^2$. Write your answer without negative exponents.

5. Write an equation in slope-intercept form (that is, in the form $y = mx + b$) for the line that passes through the points $(-2, 7)$ and $(3, -9)$.

6. Expand and simplify $(4x + 2)^2 - 8(x - 1)$.

7. Use the graph of $f(x)$ below to estimate the value(s) of x such that $f(x) = 2$.



8. For the function $f(x) = \frac{5}{x}$, find the expression $f(12 + h) - f(12)$. Simplify your answer and write your answer as a single fraction.

9. Given the piecewise defined function below, determine the value(s) of x such that $f(x) = -27$.

$$f(x) = \begin{cases} 2x - 5 & x < 0 \\ x^3 & x \geq 0 \end{cases}$$

10. Solve for x in the equation $x^2 - 2x = 8$.

11. Solve for x exactly in the equation $e^{2-5x} = \frac{1}{3}$.

12. Find all solutions to the equation $2\cos(\theta) = 1$ in the interval $[0, 2\pi]$.

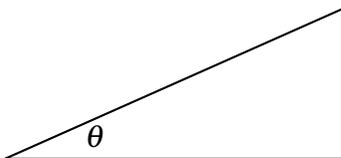
13. A table of values for the function $f(x)$ is given below. Use the table to determine $f^{-1}(5)$.

| | | | | | | | | | |
|--------|----|----|----|----|----|----|----|----|------|
| x | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 |
| $f(x)$ | 40 | 33 | 18 | 10 | -4 | 6 | 5 | -2 | -1/2 |

14. Solve the inequality $9 - x^2 \leq 0$. Give your answer in interval notation.

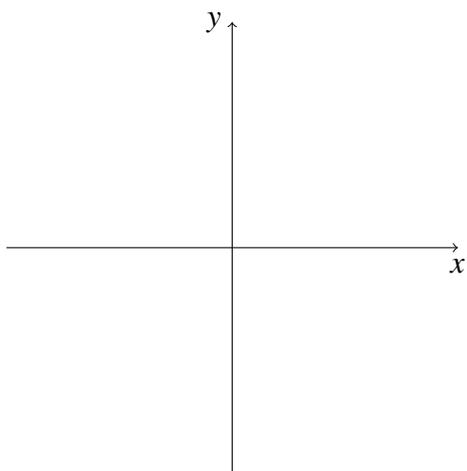
15. Determine the domain of $f(x) = \ln(x - 3)$. Give your answer in interval notation.

16. In the triangle below, $\sin \theta = \frac{1}{5}$. Determine $\cos \theta$.

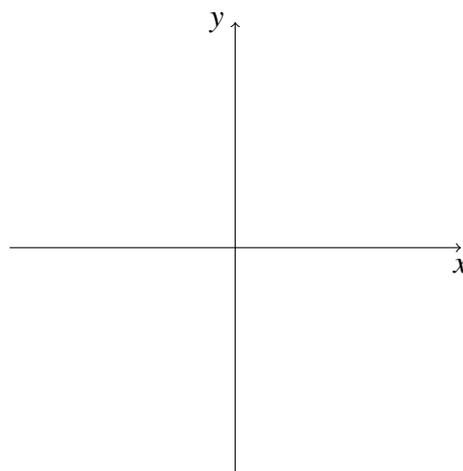


Sketch graphs of the following functions. Label the x - and y -intercepts, if they exist. Draw in any asymptotes using dashed lines, and write the equation of the asymptote, if it exists.

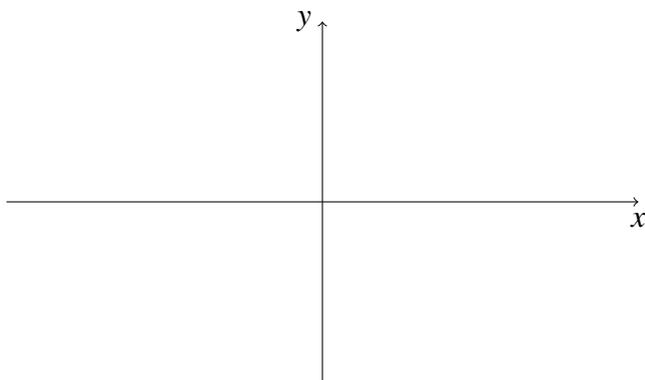
17. $f(x) = (x + 1)^3$



18. $f(x) = 1 + e^x$



19. $y = \cos(x)$ on the interval $[-2\pi, 2\pi]$



20. Given the graph of $f(x)$ below, draw the graph of $-2f(x)$.

